



SAFETY DATA SHEET – ELECTROLYTE / BATTERY ACID

I. IDENTIFICATION

Product Identifier:

Electrolyte, battery acid, sulfuric acid (dilute)

Manufacturer:

Surette Battery Company Limited

Prepared By:

Surette Battery Company Limited

Preparation Date:

January 21, 2010

Revision Date:

March 1, 2023

Supplier Name & Address:




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2. HAZARD IDENTIFICATION

HEALTH		PHYSICAL	
			
Skin Corrosion / Irritation	Category IA	Corrosive to metals	Category I
Eye Damage	Category I	Corrosive to metals	Category I
Carcinogenicity (acid mist)	Category IA	Corrosive to metals	Category I

HAZARD STATEMENTS

- DANGER!
- May cause cancer from inhalation of mists
- Harmful if swallowed, inhaled or in contact with skin
- Causes severe skin burns and eye damage
- May cause respiratory irritation
- May be corrosive to metals

SIGNAL WORD: DANGER!**PRECAUTIONARY STATEMENTS**

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Do not breathe vapor or mist
- Wash thoroughly after handling
- Wear protective gloves/protective clothing, eye protection and face protection
- If exposed or concerned: get medical advice / attention
- If swallowed: rinse mouth; do NOT induce vomiting
- If inhaled: remove person to fresh air and keep comfortable for breathing; contact poison center or doctor
- If on skin (or hair): take off immediately all contaminated clothing; rinse skin with water/shower; wash contaminated clothing before reuse
- If in eyes: rinse cautiously with water for several minutes, remove contact lenses if present and easy to do; continue rinsing, contact poison center or doctor

3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENTS (CHEMICAL / COMMON NAME)	CAS #	% BY WEIGHT
Sulfuric Acid (Electrolyte)	7664-93-9	30-40

4. FIRST-AID MEASURES**Inhalation:**

Electrolyte (Sulfuric Acid) – Remove to fresh air immediately. If not breathing give artificial respiration. If breathing is difficult, give oxygen. If breathing difficulty does not improve rapidly, transport to doctor. Consult a doctor or poison control for treatment advice.

Ingestion:

Electrolyte (Sulfuric Acid) – Give large quantities of water, do NOT induce vomiting or aspiration into the lungs may occur and can cause permanent injury or death. If vomiting does occur, keep head low to avoid stomach content entering the lungs. Get immediate medical attention.

Skin:

Electrolyte (Sulfuric Acid) – Flush with large amounts of water for at least 15 minutes. Remove contaminated clothing, including shoes. Wash contaminated clothing before reuse, discard contaminated shoes. Seek medical attention if symptoms/irritation persists.

Eyes:

Electrolyte (Sulfuric Acid) – Flush immediately with large amounts of water for at least 20 minutes while lifting lids. Remove contact lenses if present and easy to do, continue rinsing. Seek immediate medical attention.



5. FIRE-FIGHTING MEASURES

Extinguishing Media / Agents – CO₂, foam, dry chemical; Water applied to sulfuric acid generates heat and causes acid to splatter, wear full-cover protective, acid-resistant clothing and self-contained breathing apparatus.

Fire Fighting Procedures:

Use self-contained breathing apparatus and standard firefighting procedures, considering hazards of other involved materials.

Hazardous Combustion products: reacts violently with metals, nitrates, chlorates, carbides and other organic materials; reacts with most metals to yield explosive and flammable hydrogen gas.

6. ACCIDENTAL RELEASE MEASURES

Wear acid-resistant clothing, boots, gloves and face shield. Stop flow of material, contain/absorb small spills with dry sand, earth or vermiculite; do not use combustible materials. If possible, carefully neutralize spilled electrolyte with suitable alkali such as lime, soda ash or sodium bicarbonate. Do not allow discharge of un-neutralized acid to sewer. Flush with water in accordance with applicable regulations. Consult federal, provincial/state and local requirements for allowed means of disposal.

7. HANDLING AND STORAGE

Handling:

Wear protective clothing and equipment during handling and avoid contact with skin, eyes and clothing. Wash after handling. Storage and handling areas should be equipped with proper containment to capture and neutralize spills. In addition, these areas should be equipped eyewash stations and safety showers. Do not breathe in vapor, provide adequate ventilation and avoid prolonged exposure.

Storage:

Store in cool, dry, well-ventilated areas with impervious surfaces and adequate containment in the event of a spill. Storage and handling areas should be equipped with proper containment to capture and neutralize spills. In addition, these areas should be equipped eyewash stations and safety showers. Avoid damage to containers, store away from incompatible materials, keep away from metallic objects, heat, sparks and open flame.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits (mg/m³)

CHEMICAL	OSHA PEL	NIOSH (US)	ACGIH	QUEBEC PEV	ONTARIO OEL	OEL (EU)
Sulfuric Acid (Electrolyte)	1	1	0.2	1	0.2	0.05(a)

(a) Thoracic fraction

8. EXPOSURE CONTROLS / PERSONAL PROTECTION CONT'D.**Engineering Controls:**

Store and handle in a well-ventilated area; if mechanical ventilation is used, components must be acid-resistant.

Respiratory Protection:

None required under normal conditions. Depending on exposure, or sulfuric acid concentrations, use NIOSH or MSHA approved respiratory protection.

Skin Protection:

Use rubber or plastic acid-resistant gloves with elbow length gauntlet, acid-resistant clothing, apron and boots.

Eye Protection:

Use chemical splash goggles or face shield.

Other Protection:

In areas where sulfuric acid solutions are handled in concentrations greater than 1%, and depending on exposure and workplace standards, emergency eyewash stations and showers should be provided, with unlimited water supply; wash hands after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

The following information is relevant to ingredients only and is only valid when contents are exposed.

ELECTROLYTE (SULFURIC ACID)	
Physical state, odor and appearance	Liquid, sharp, pungent odor, colorless
Solubility in water (w/w)	100%
Boiling point	203-240°F
pH	~ 1 to 2

ELECTROLYTE (SULFURIC ACID)	
Specific Gravity (H ₂ O = 1)	1.215 to 1.350
Vapor Pressure (mm Hg)	10
Vapor Density (Air = 1)	Greater than 1
Evaporation rate (Butyl Acetate = 1)	Less than 1

10. STABILITY AND REACTIVITY

stable



unstable

This product is stable under normal conditions at ambient temperature.

Conditions to avoid:

Contact with organic materials, combustibles, strong reducing agents, metals, strong oxidizers, water.

Incompatibilities: (materials to avoid)

Contact with combustibles and organic materials may cause fire and explosion; also reacts strongly with strong reducing agents, metals, sulfur trioxide gas, strong oxidizers and water; contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas; never add water to acid, acid should always be slowly added to water.

Hazardous Decomposition Products:

Sulfur trioxide, sulfur dioxide, sulfuric acid mist, hydrogen sulfide and carbon monoxide.

Hazardous polymerization will not occur.

Rolls

II. TOXICOLOGICAL INFORMATION

	INHALATION	ORAL
Electrolyte (Sulfuric Acid)	LC ₅₀ rat: 375 mg/m ³	LD ₅₀ rat: 2140 mg/kg

Routes of entry:

Inhalation, ingestion, skin or eye contact; harmful by all routes of entry.

Inhalation – breathing of sulfuric acid vapors or mists may cause severe respiratory irritation.

Ingestion – may cause severe irritation of the mouth, throat, esophagus and stomach.

Skin Contact – severe irritation, burns, and ulceration.

Eye Contact – severe irritation, burns, cornea damage and blindness.

Effects of Overexposure (Acute) – severe skin irritation, damage to cornea, upper respiratory irritation.

Effects of Overexposure (Chronic) – possible erosion of tooth enamel, inflammation of nose, throat and bronchial tubes.

Carcinogenicity – the International Agency for research on Cancer (IARC) has classified “strong inorganic mist containing sulfuric acid” as a Group I carcinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of the product, such as overcharging, may result in the generation of sulfuric acid mist.

Overexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of sulfuric acid with skin may aggravate diseases such as eczema and contact dermatitis.

Additional Health Data:

Most inhalation problems can be avoided by adequate precautions such as ventilation and respiratory protection covered in Section 8. Follow good personal hygiene to avoid inhalation and ingestion; wash hands, face, neck and arms thoroughly before eating, smoking or leaving the worksite.

Keep contaminated clothing out of non-contaminated areas, or wear cover clothing when in such areas. Restrict the use and presence of food, tobacco and cosmetics to non-contaminated areas.

12. ECOLOGICAL INFORMATION

Sulfuric acid is harmful to aquatic life in very low concentrations and may be dangerous if it enters water intakes. Sulfuric acid can lower water and soil pH causing acidic conditions and reacts with calcium and magnesium to form sulfate salts.

Aquatic Toxicity:

Sulfuric Acid	24 hr LC ₅₀ , freshwater fish (Brachydanio rerio)	82 mg/L
Sulfuric Acid	96 hr LOEC, freshwater fish (Cyprinus carpio)	22 mg/L

Rolls

13. DISPOSAL CONSIDERATIONS

Consult national/federal, provincial/state and local regulations for allowed means of disposal.

Place neutralized slurry into sealed acid-resistant containers and handle as applicable with provincial/state and national / federal regulations.

Large water diluted spills, after neutralization and testing, should be managed in accordance with local, provincial/state and national/federal requirements.

Following local, provincial/state and national / federal regulations applicable to end of life characteristics will be the responsibility of the end user.

14. TRANSPORT INFORMATION

The US Department of Transportation (DOT)

Proper Shipping Name: Battery fluid, sulfuric acid (dilute), electrolyte

Hazard Class: 8

UN Identification: UN2796

Packing Group: II

Labels: Corrosive

Reference 49 CFR packing instructions 173.154 or 173.202 or 173.242

IATA Dangerous Goods Regulations (DGR)

Proper Shipping Name: Battery fluid, sulfuric acid (dilute), electrolyte

Hazard Class: 8

UN Identification: UN2796

Packing Group: II

Label/Placard Required: Corrosive

Reference IATA Packing Instructions Y840 or 851 or 855

IMDG Code

Proper Shipping Name: Battery fluid, sulfuric acid (dilute), electrolyte

Hazard Class: 8

UN Identification: UN2796

Packing Group: II

Label/Placard Required: Corrosive

Reference IMDG Code Packing Instructions P001



15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products regulations (CPR) and the SDS contains all information required by Controlled Products Regulations. Distribution within Canada to follow Canadian Controlled Product Regulations (CPR) 24(1) and 24(2).

The acid in lead-acid batteries is sulfuric acid, which is an Extremely Hazardous Substance (EHS). The following table outlines the applicable EPCRA sections and their respective thresholds for sulfuric acid:

EPCRA SECTIONS	THRESHOLDS
302 – Emergency Planning Notification	TPQ \geq 1000 lbs
304 – Emergency Release Notification	RQ \geq 1000 lbs
311 – MSDS Reporting	*TPQ \geq 500 lbs
312 – Chemical Inventory Reporting (i.e. Tier II)	*TPQ \geq 500 lbs

* The reporting threshold for sulfuric acid is \geq the designated TPQ (Threshold Planning Quantity) or 500 lbs, whichever is less.

Supplier Notification: This product contains toxic chemicals that may be reportable under EPCRA Section 313 Toxic Chemical release Inventory (Form R) requirements. For a manufacturing facility under SIC codes 20 through 39, the following information is provided to enable you to complete the required reports:

TOXIC CHEMICAL	CAS NUMBER	APPROXIMATE % BY WEIGHT
Battery Acid (Sulfuric Acid)	7664-93-9	30 - 40

California Proposition 65 Warning:

Sulfuric acid mist is known to the State of California to cause cancer.

Distribution into the EU to follow applicable Directives to the Use, Import/Export of the product as-sold.

16. OTHER INFORMATION

NFPA Hazard rating for sulfuric acid:

Flammability (Red) = 0

Health (Blue) = 3

Reactivity (Yellow) = 2

Sulfuric acid is water-reactive is concentrated

Disclaimer:

This Safety Data Sheet is based upon information and sources available at the time of preparation or revision. The information was obtained from sources believed to be reliable, however, not under our supervision or control.

Surrette Battery Company Limited makes no Warranty of Merchantability or any other warranty, expressed or implied, with respect to such information and we assume no responsibility resulting from its use. The data contained in this SDS is offered for your information, consideration and investigation. The guidelines for the safe handling and use of this product provided do not and cannot advise on every possible situation and use of this product should be assessed to determine if additional precautions are required. It is the responsibility of each user of this product to determine the suitability of this product and adhere to the requirements of all applicable laws regarding use, transport and disposal of this product.